Service manual

LM1931W

—CATALOG—

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1. Safety item which should be paid attention to when maintaining

1.1 Before connecting the AC power to the monitor, please make sure the monitor specified voltage can work with the local voltage.

1.2 LCD monitor should be placed in a low moisture and low dust environment

1.3 Place the monitor onto the hard surface with great care. Because the LCD monitor surface is made of Plastic parts and thin glass, so dropping, shocking, or scratching can cause the damage of the LCD monitor.

1.4 When clear the monitor surface, please don't use ketone(such as acetone), ethanol, toluol, acetic acid, methane, chloride and etc. Because these materials can cause damage to the LCD monitor surface.

1.5 When the LCD monitor happens the abnormal situation, expecially abnormal sound and smell can be identified, please unplug the socket immediately.

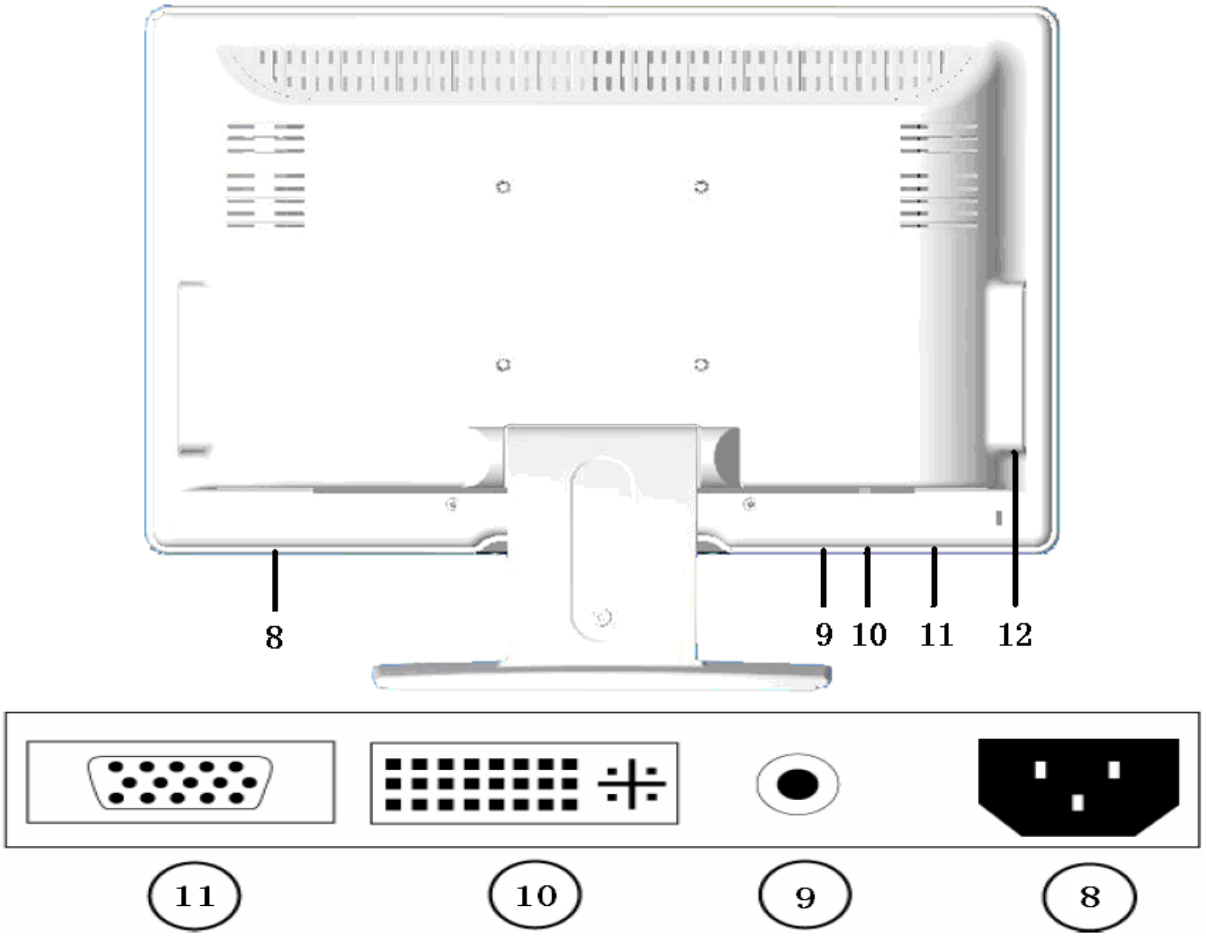
1.6 When maintaining the LCD monitor, to avoid the danger, one must completely finish the monitor assembly(including driving the screws into the monitor covers), and then turn on the monitor and test

2.Monitor appearance and hardware structure introduction

2-1 Front appearance drawing

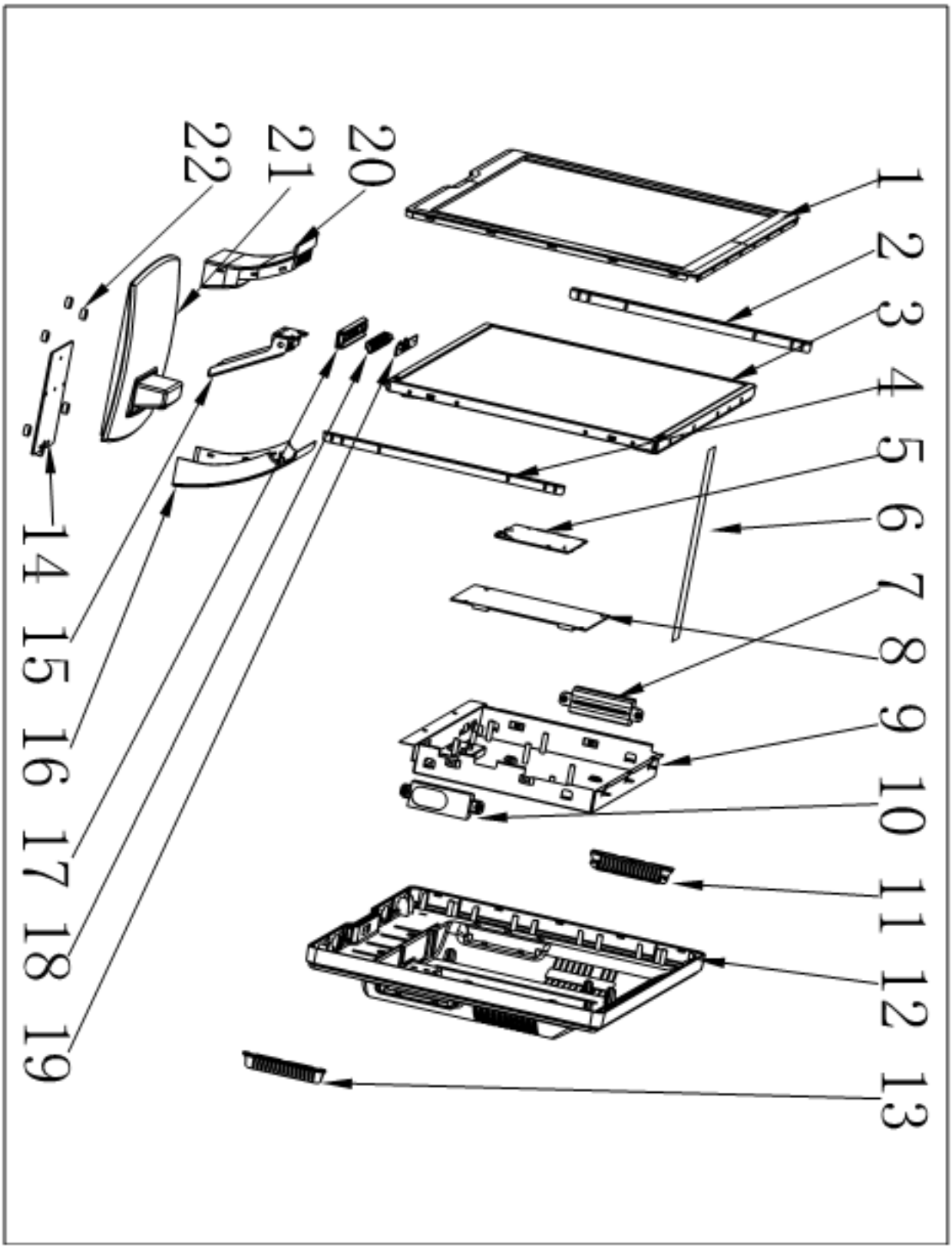
No			Function
1	PL		It can show and change model PC/GAME/MOVIE when OSD i not shown.
2	AUTO		Automatically adjust clock and phase when OSD is not shown, or press in three consecutive seconds to switch VGA/DVI signal.
3	MENU		Press it to open the OSD Menu, to select Menu options when the OSD Menu is displayed.
4	POWER ⏻		Power on or off
	Indicator light	Blue	
		Blue and flicker	
		LED OFF	
5	EXIT		Volume adjust hot key when OSD is not displayed, used for returning to former OSD when OSD menu is displayed.
6	DOWN ◀		Contrast ratio key when OSD is not displayed, move the selected menu down when OSD is displayed, decrease the value when enter into the OSD.
7	UP ▶		Brightness key when OSD is not displayed, move the selected menu up, increase the value when enter into the OSD.

2-2 Back Appearance Drawing



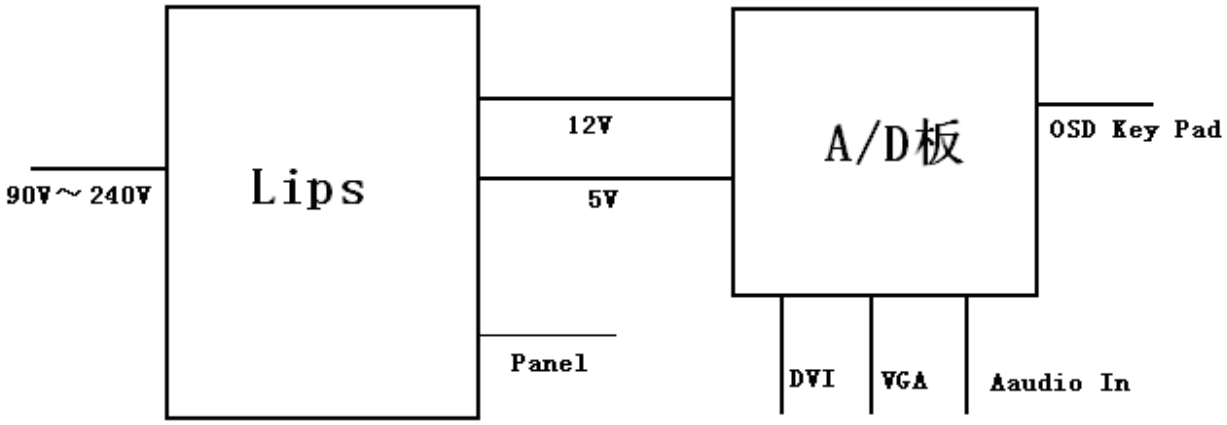
NO	Name
8	Power input
9	AUDIO input(OPTION)
10	DVI input
11	VGA input
12	SPEAKER (2W*2)

2-3 Explosion Drawing

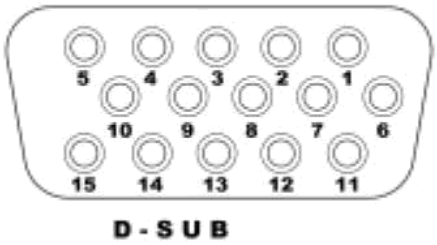


No	PARTS NAME	Q'TY
1	FRONT COVER	1
2	**LEFT BRACKET**	1
3	**PANEL**	1
4	**LEFT BRACKET**	1
5	A/D BOARD	1
6	LCD CABEL	1
7	LEFT SPEAKER	1
8	Lips BOARD	1
9	SHIELD CONER	1
10	RIGHT SPEAKER	1
11	LEFT SPEAKER COVER	1
12	BACK COVER	1
13	RIGHT SPEAKER CONER	1
14	CHASSIS BOTTOM	1
15	HING	1
16	STAND BACK	1
17	BUTTON ACCESSORIZE	1
18	KEY BOARD	1
19	BUTTOM COVER	1
20	STAND FRONT	1
21	STAND BASE	1
22	RUBBER SHEET	6

2-4System Block Diagram

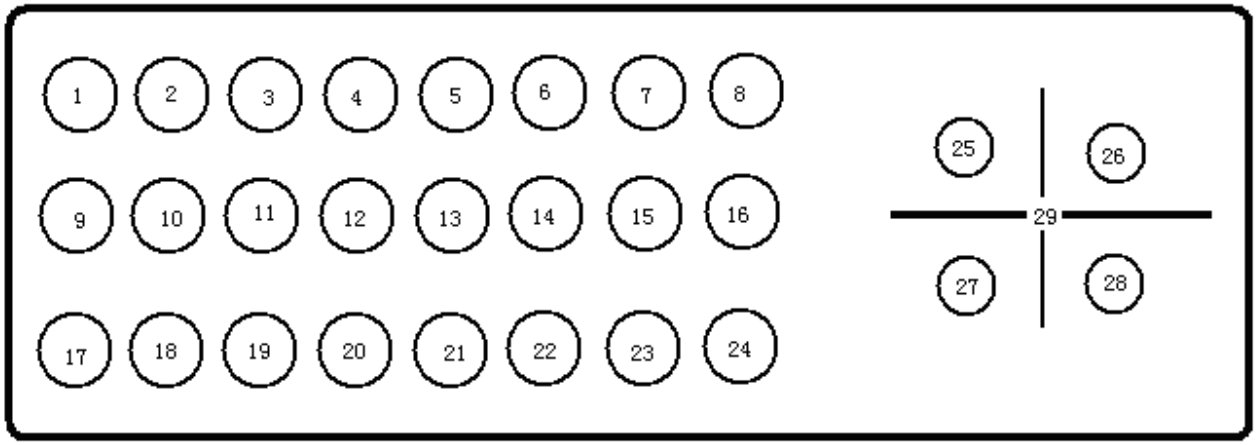


2-5 D-SUB Pin Definition



Pin No.	15-Pin	Pin No.	15-Pin
1	R	9	NC
2	G	10	GND
3	B	11	NC
4	NC	12	SDA
5	GND	13	HSYNC
6	GND-R	14	VSYNC
7	GND-G	15	SCL
8	GND-B		

2-6 DVI Pin Definition



DVI

Pin No.	Function	Pin No.	Function	Pin No.	Function	Pin No.	Function
1	DATA2-	2	DATA2+	3	GND	4	DATA4-
5	DATA4+	6	DDC CLK	7	DDC DATA	8	A-VSYNC
9	DATA1-	10	DATA1+	11	GND	12	DATA3-
13	DATA3+	14	VCC (5V)	15	GND	16	H-PLUG
17	DATA0-	18	DATA0+	19	GND	20	DATA5-
21	DATA5+	22	GND	23	CLK-	24	CLK+
25	NC	26	NC	27	NC	28	NC
29	NC						

2-7 OSD Key Function

1. **PL**：It can show and change model PC/GAME/MOVIE when OSD i not shown.
2. **Auto (**automatic adjustment key**)**：automatically adjust clock and phase key when OSD is displayed; press in consecutive seconds to switch VGA/DVI signal.
1. **MENU**：Press it to open OSD menu, to select Menu options when the OSD menu is displayed
2. **POWER**⏻：Power on or off
3. **EXIT**：Volume adjust hot key when OSD is not displayed, used for returning to former OSD when OSD menu is displayed.

6. DOWN ◀ **：** Contrast ratio key when OSD is not displayed, move the selected menu down when OSD is displayed, decrease the value when enter into the OSD.

7. UP ▶ **：** Brightness key when OSD is not displayed, move the selected menu up, increase the value when enter into the OSD.

* Press the “MENU” button to start the OSD function.

* Pree” ◀ ”or” ▶ ”button to select adjusting function

* Press “MENU” button to enter into the function which is going to be adjusted.

* Pree” ◀ ”or” ▶ ”button to change the present setting value of the function.

* Press “Exit” to leave the OSD menu or return to the former action, and it can store the change points

Attention:

* Press ◀ button to move OSD in a numerical order.

* Press ▶ button to move OSD in a reverse numerical order.

* Language：ENGLISH、Francais、Deutsch、Espanol、Italiano、Japanese、Korean、simplified Chinese.

*** Input signal choice: VGA input signal is analogue; DVI input signal is digital**

3.Maintaining Instruments and Test Equipment

Definition: Defect circuit board and the inside signal cable change.

3-1 Instruments

1.Multimet

2.Electric screwdriver

3.
Cross head driver

Hex screw driver

3-2 Test equipment

PC for test

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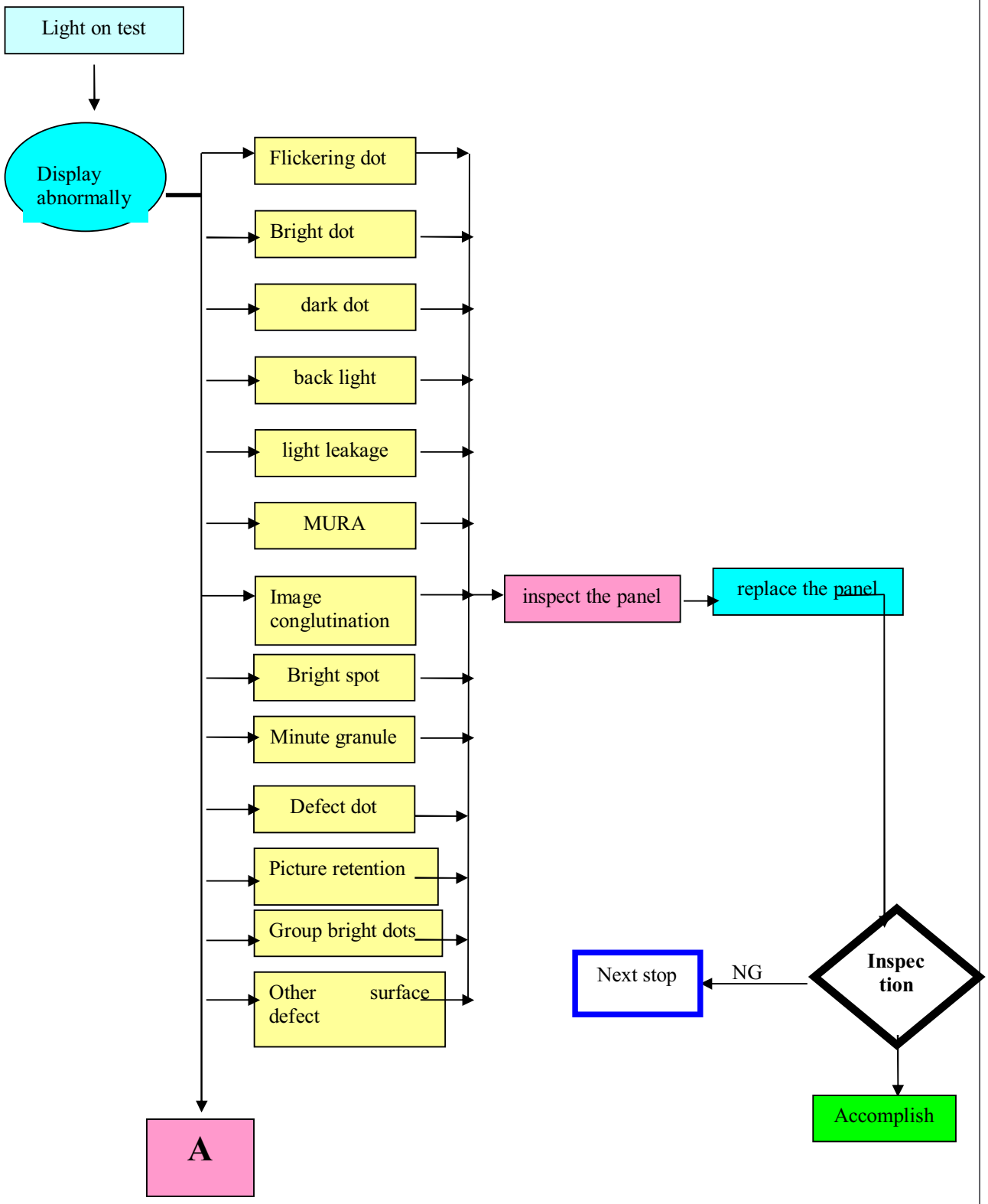
4.Problem analysis

Problem phenomenon	Problem analysis	Maintenance	Test



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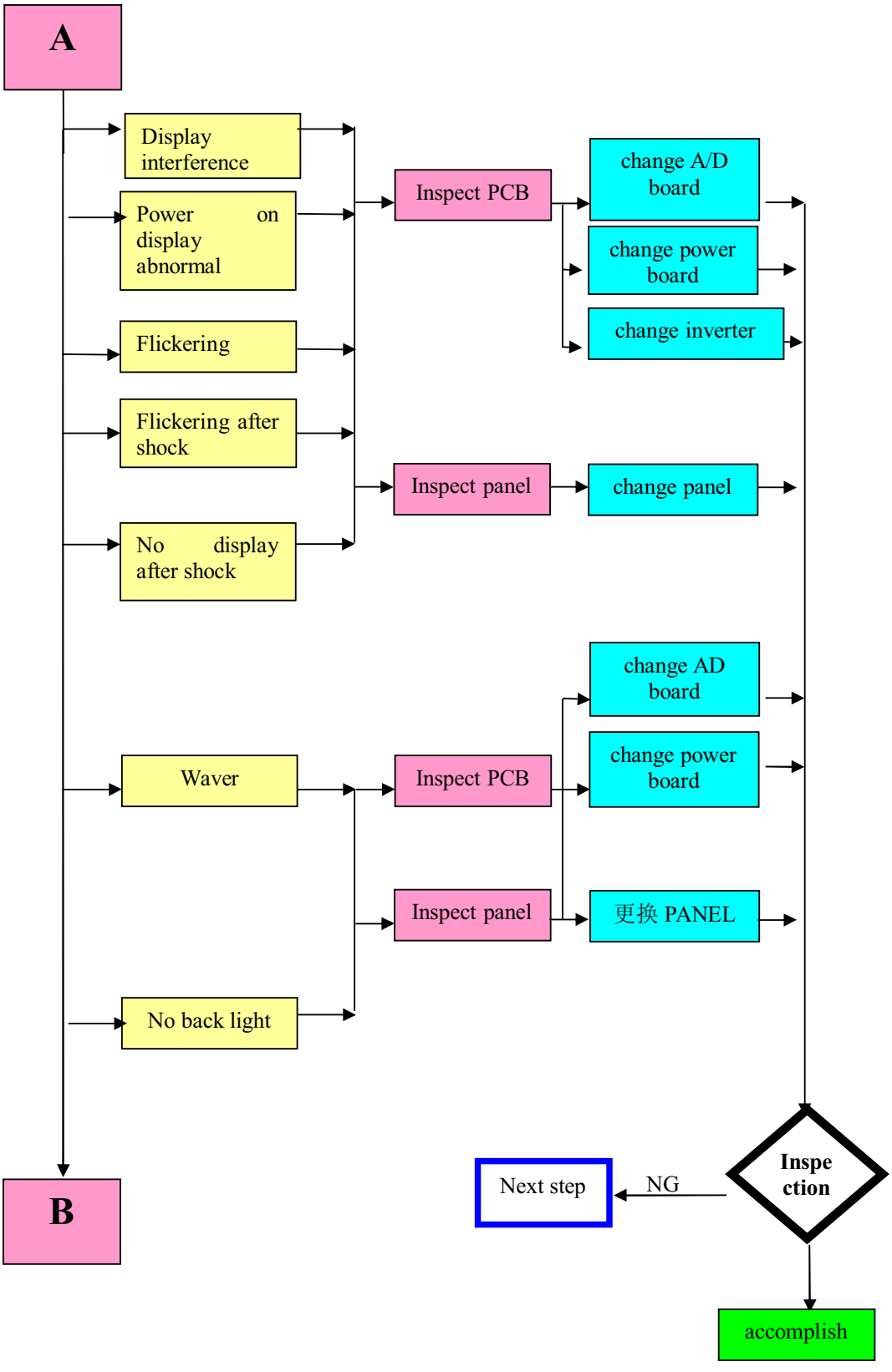
Problem phenomenon	Problem analysis	Maintenance	Test



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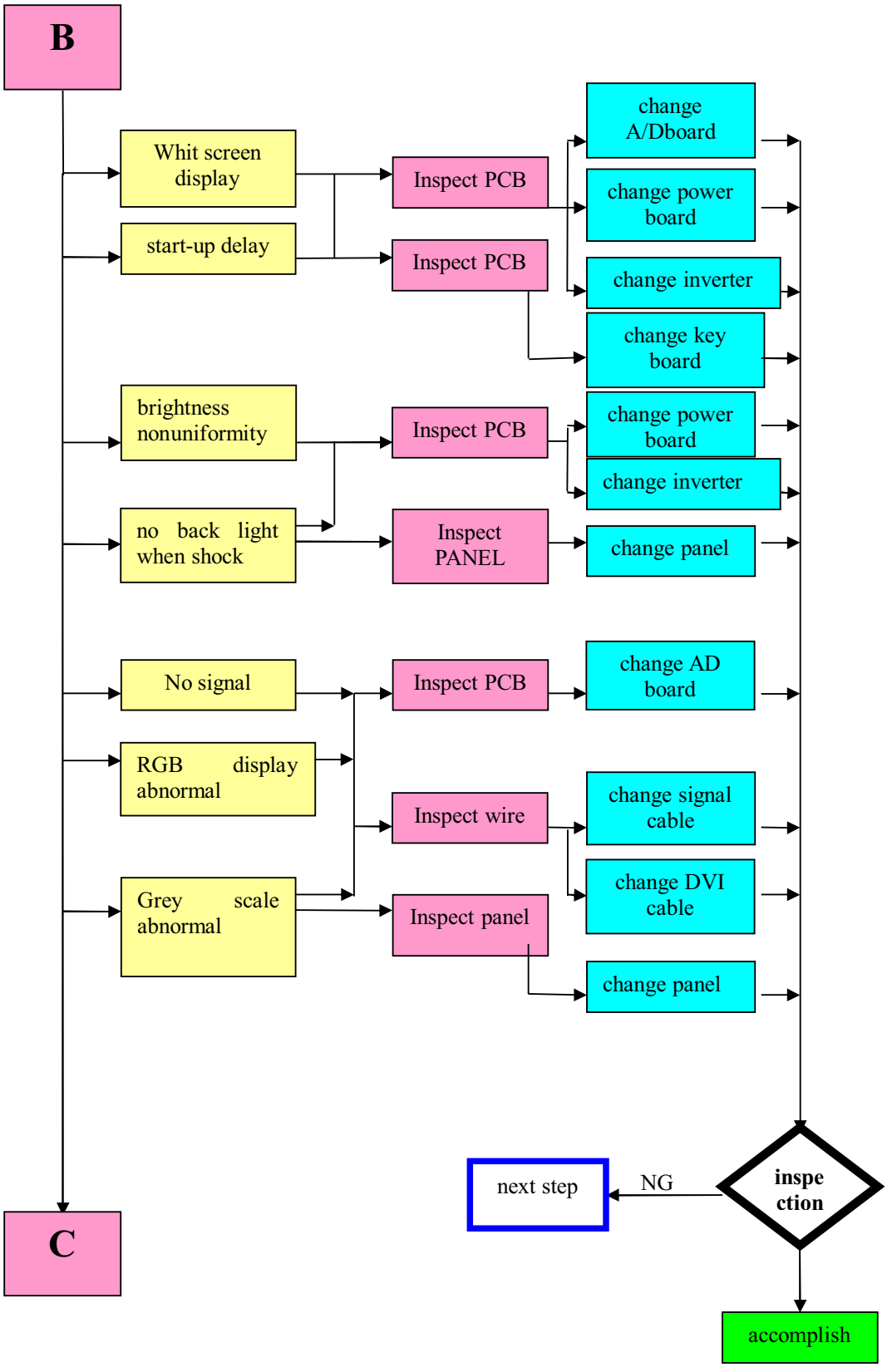
Problem phenomenon	Problem analysis	Maintenance	Test



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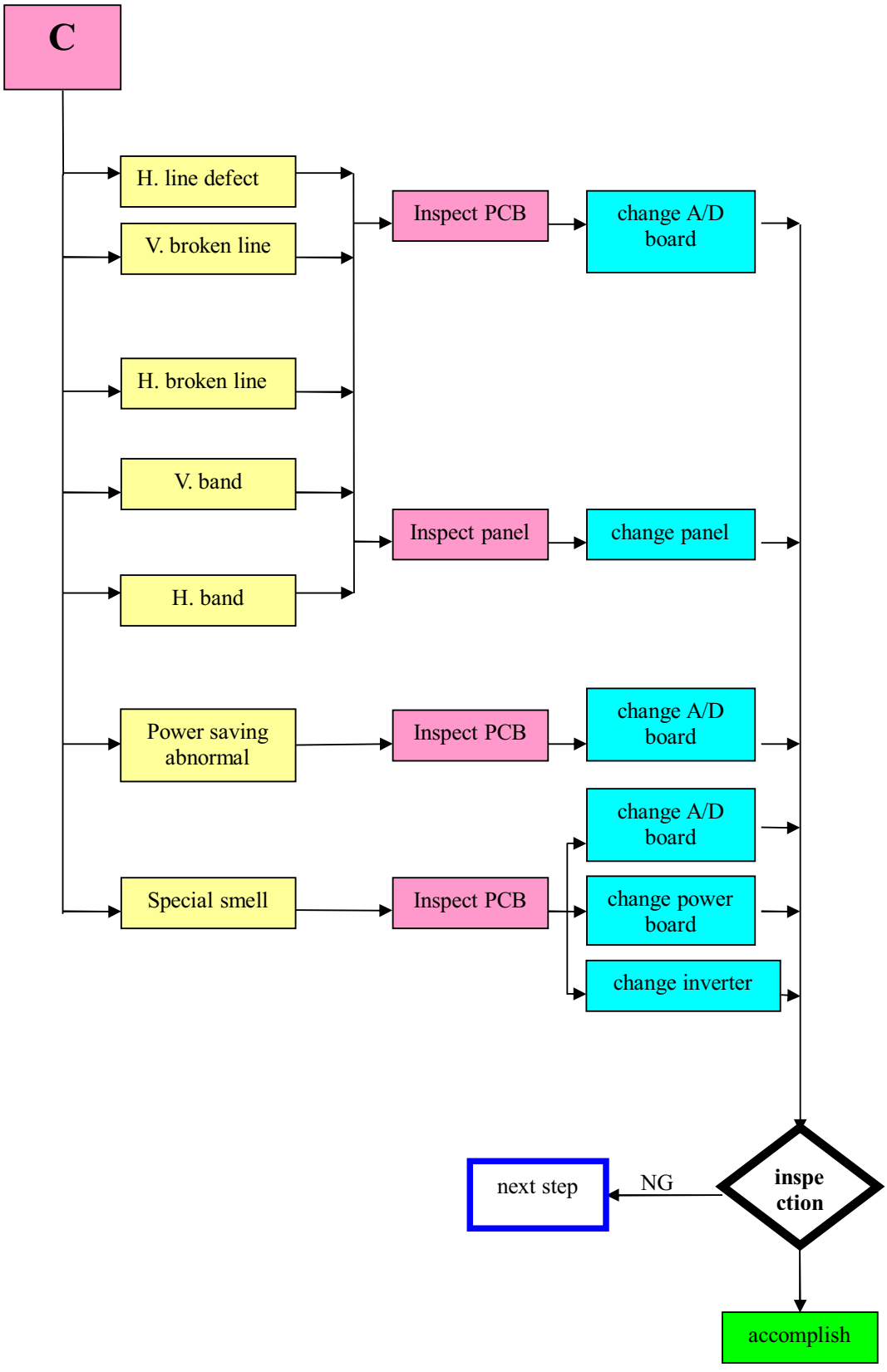
Problem phenomenon	Problem analysis	Maintenance	Test



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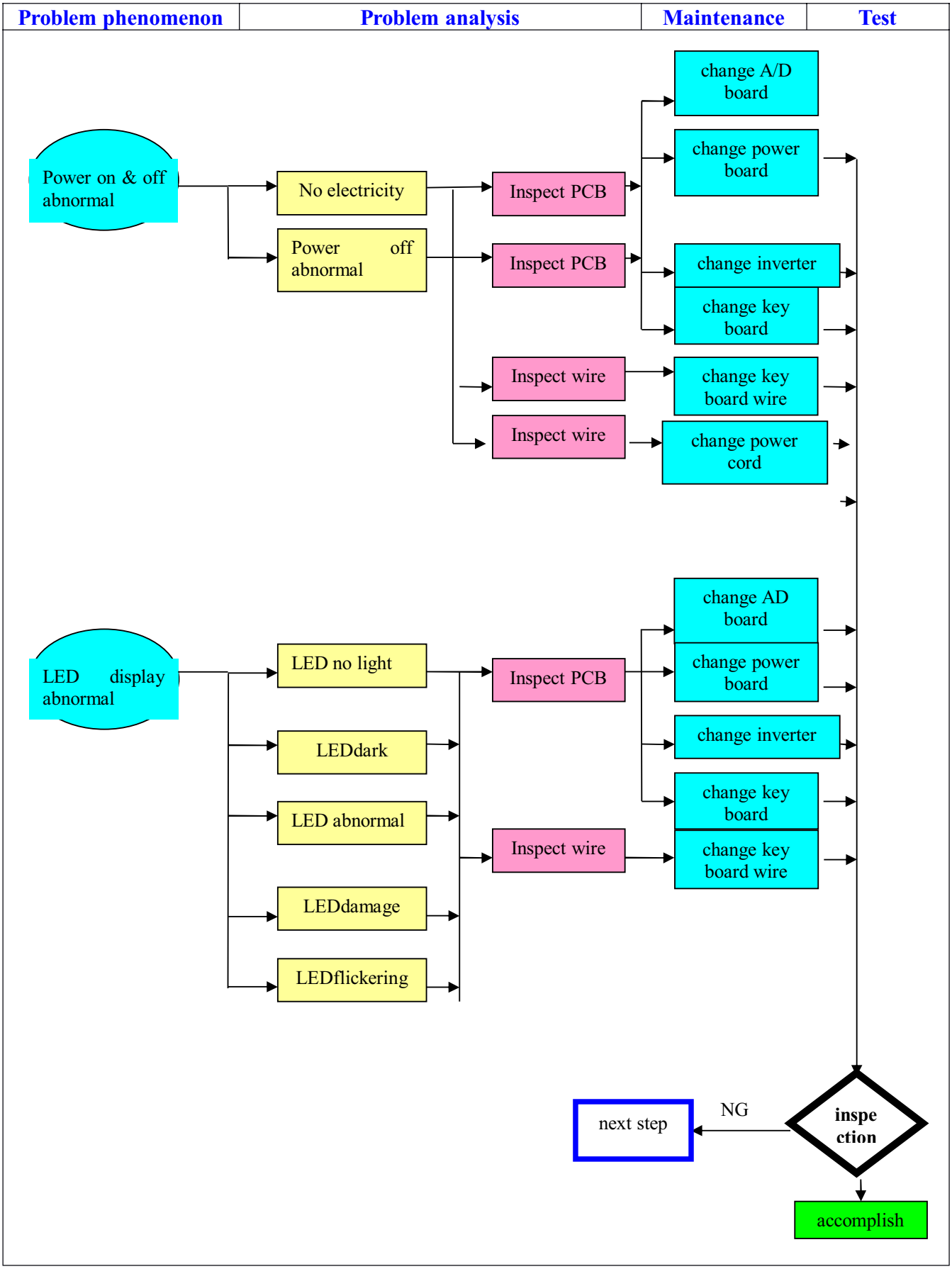

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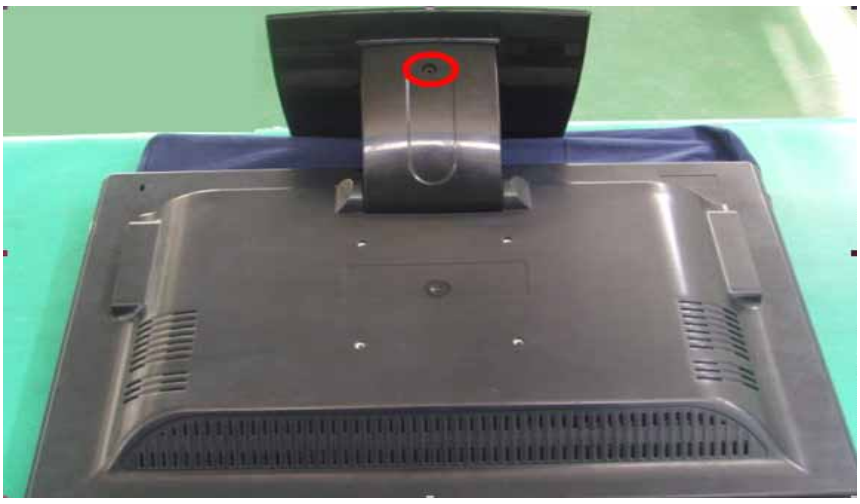
5.Monitor Disassembly and Assembly Flow

※ Must avoid panel scratch

※ Must prevent static problems

1.Disassemble the support neck
2.Disassemble the front cover
3.Disassemble the panel
4.Disassemble A/D board, power board and inverter board
5.Disassemble the speaker cover

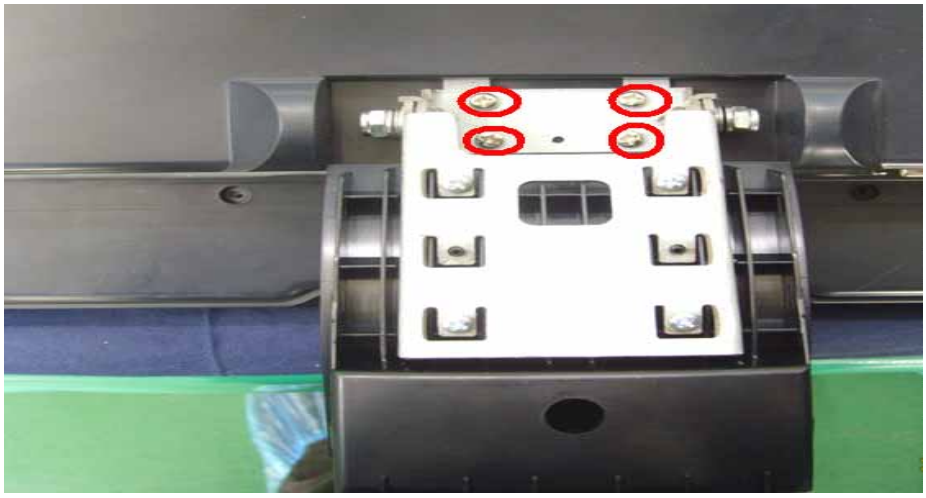
1. Put monitor flat on cushion as following photo shown, then press cover latch softly.



2. Take the STAND BACK out with hands

3.If it is difficult to disassemble STAND BACK, then take STAND BACK off with flatheaded screwdriver from gaps between STAND BACK and front cover as photo shown

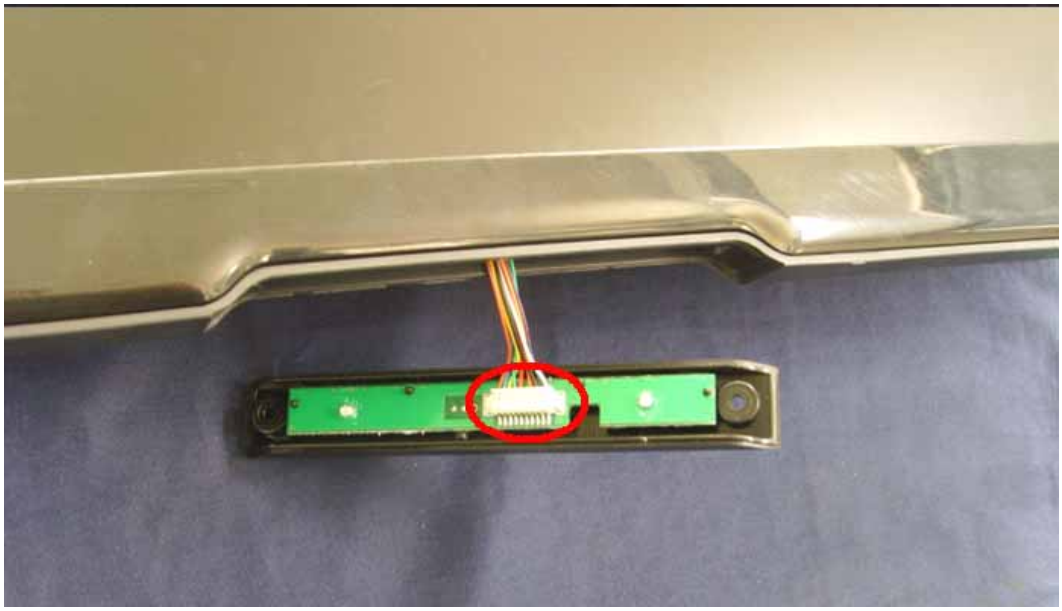
4.Take off four marked hinge fixation screws with screwdriver as photo shown, then take off hinge and put monitor flat on cushion.



4. Lock monitor front cover as photo shown location with both hands and put monitor aside.

6.Screw off the two screws as photo shown used for key board fixation.

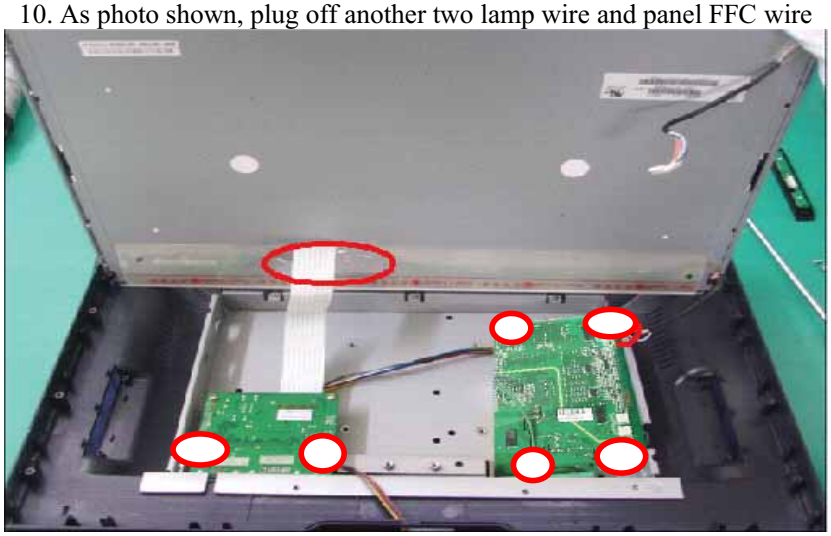
7. As photo shown, plug off key connecting wire and take off key board.



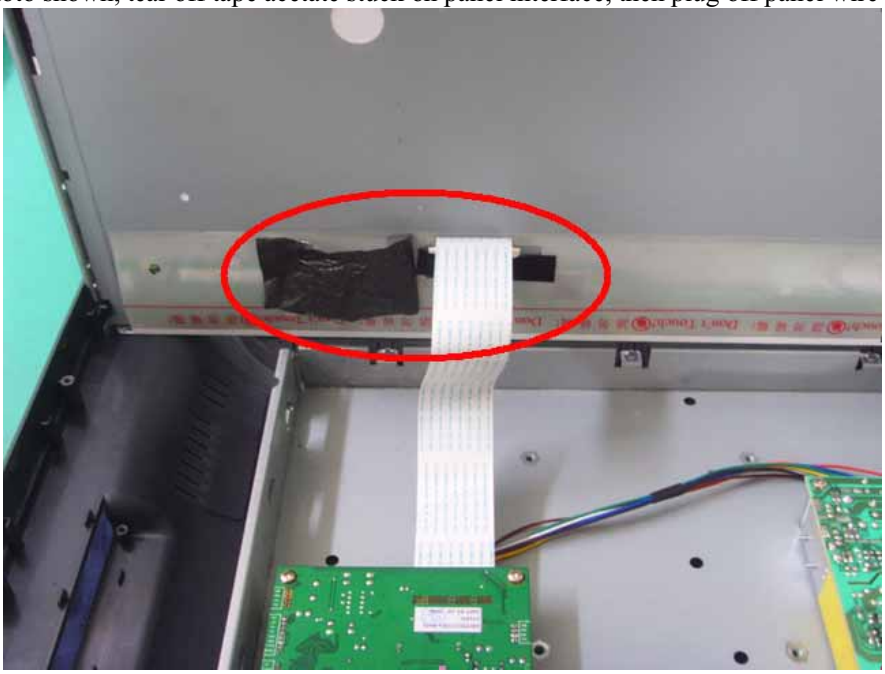
8. As following photo shown, take off eight screws used for panel fixation.

9. Hold up panel softly and plug off two lamp wire as photo shown

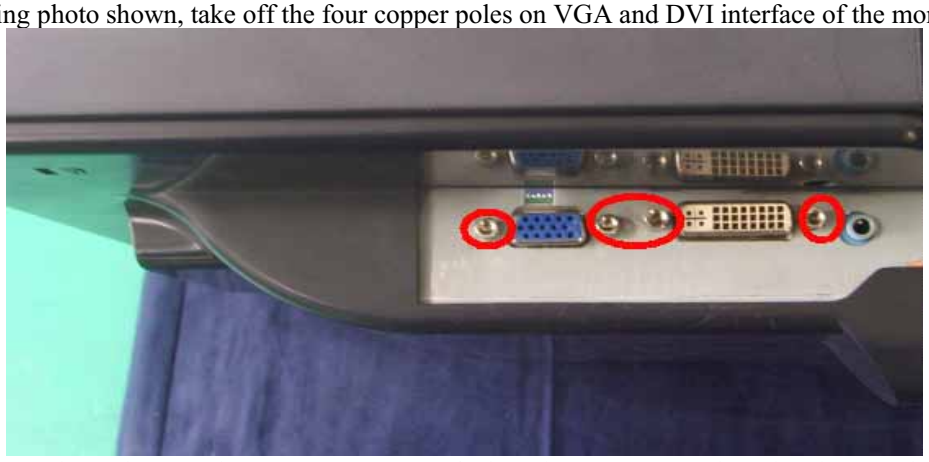
10. As photo shown, plug off another two lamp wire and panel FFC wire



11. As following photo shown, tear off tape acetate stuck on panel interface, then plug off panel wire and put panel aside.

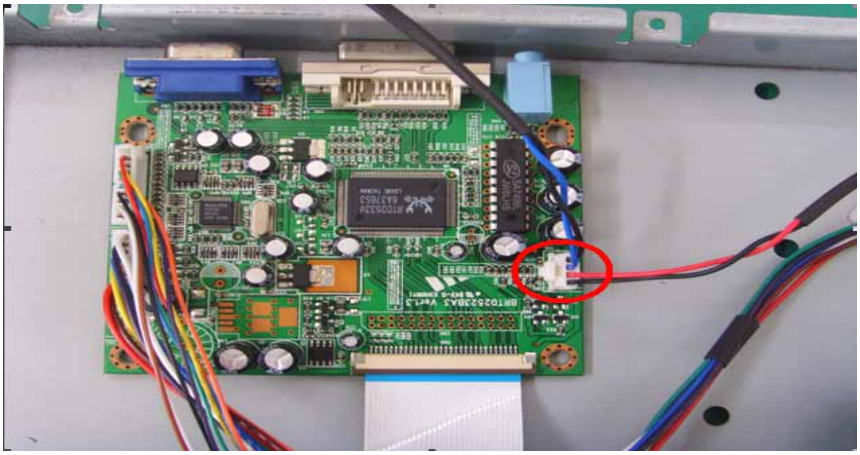


12. As following photo shown, take off the four copper poles on VGA and DVI interface of the monitor bottom.



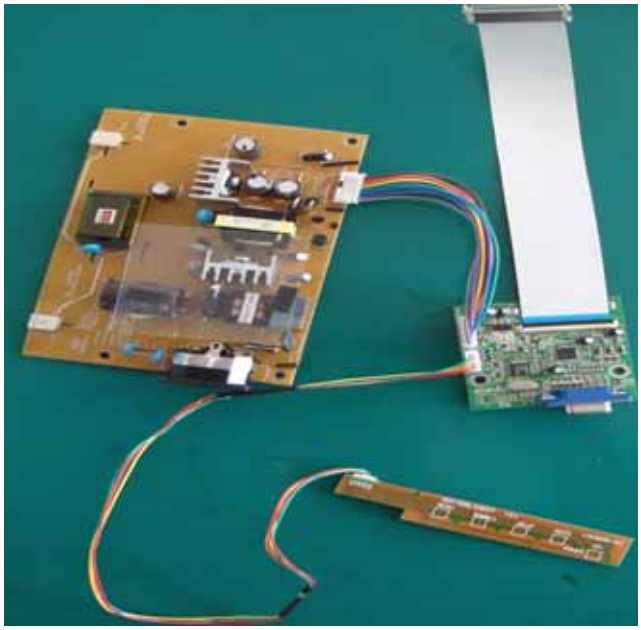
13. As following photo shown, take off 13 screws of A/D board, inverter, Lips board and cover shield fixation.

14. As following photo shown, plug off speaker wire on A/D board, take off A/D board, inverter and Lips board.

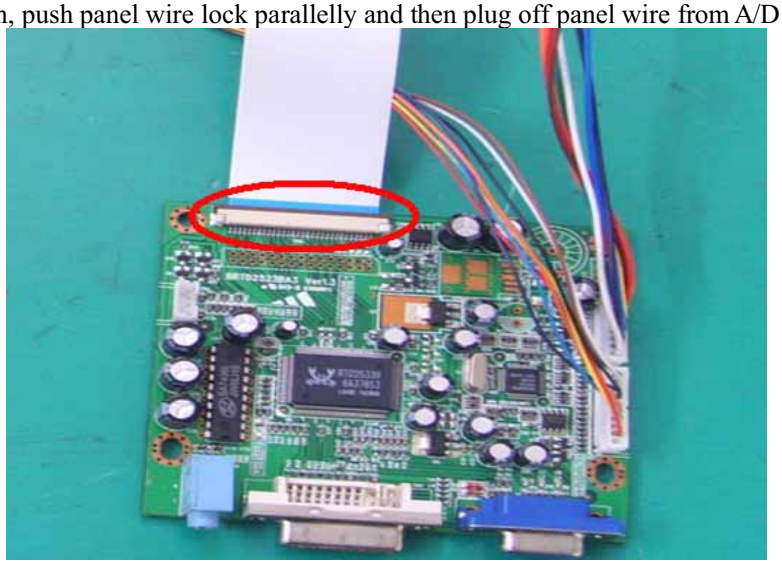


15. As following photo shown, take off the four screws used for speaker cover fixation and take off the two speaker covers at the same time.

16. As following photo shown, plug off connecting wire among A/D board, inverter and Lips board.



17. As following photo shown, push panel wire lock parallelly and then plug off panel wire from A/D board interface.



6. Maintaining Parts Form

Item	Part name
1	A/D board
2	Inverter board
3	Power board
3	Key board
4	Front cover
5	Back cover
6	Stand base
7	Stand base support up cover
8	Stand base support down cover
9	Button knob